

FACT SHEET

AUGUST 1999

Lead Based Paint

Introduction

Lead has been used for thousands of years in a variety of different products. Lead compounds such as white lead and lead chromate were widely used as pigments in paint. Lead was also common in varnishes and primers. Most housing units, apartments and office buildings built before 1980 contain some Lead-Based Paint (LBP). The U.S. Department of Housing and Urban Development (HUD) defines LBP as any paint containing lead greater than 1.0 milligram per square centimeter (mg/cm²) or 0.5 percent by weight. LBP may be on any interior or exterior surface, particularly on woodwork, doors, and windows. LBP is still used in industrial and marine paints as a rust inhibitor, primarily on steel structures such as bridges, ships, and the exterior of water tanks. GSA must often deal with LBP issues during renovation and maintenance of older or historic buildings.

While exposure to lead is a concern for all, childhood lead poisoning is one of the most common and preventable health problems in the United States today. Experts agree there are three major sources of lead exposure to children: (1) LBP, (2) lead-contaminated soil and dust, and (3) drinking water. The major source of lead exposure for adults is from operations involving maintenance, renovation, abatement work, and corrosion control of items previously painted with LBP. In addition to these potential occupational exposures, lead may be brought into family housing on clothing of personnel who work in lead-contaminated areas. This fact sheet provides information about LBP regulations and policies that have been implemented and are being proposed to protect health and the environment.

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Legislative and Regulatory History

Since the 1970s, the Federal government has taken several steps to reduce the risks associated with lead exposures. Steps include limiting the amount of lead in house paint to less than 0.06%, banning the use of lead in the solder and pipes used in public drinking water systems, and removing lead from gasoline. The table, "Federal Statutes and Regulatory Requirements," on page 2 lists the major Federal requirements applicable to GSA on LBP.

GSA Guidance on LBP

PBS P 5800.36A, "Property Management Business Practice Handbook," (October 17, 1995), Chapter 2, "Occupancy Services," states GSA will "Assess paint to be disturbed by an operation or construction activity as needed to address EPA and OSHA regulations and guidance, and Department of Housing and Urban Development (HUD) guidelines, and implement appropriate risk-control measures. In child care centers, GSA will test for and abate lead-based paint according to HUD guidelines." GSA Technical Guide E-401, "Lead Based Paint in Child Care Centers," states that LBP surfaces must be abated before a child care center opens.

GSA Technical Guide E-402, "Lead Based Paint" (March 1995), states that it is GSA policy to test for LBP whenever a renovation project requires sanding, welding or scraping painted surfaces. As general guidance, LBP should not be abated if the painted surfaces are intact and in good condition.

PBS P 4000.1, "Excess and Surplus Real Property," (June 29, 1994), Chapter 5, "Environmental, Historic And Coastal Zone Management Considerations," requires full disclosure of all known

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Federal Statutes and Regulatory Requirements	
<i>1971 - LBP Poisoning Prevention Act (LBPPA)</i>	Requires housing authorities to inspect public and Indian housing for LBP hazards.
<i>1978 - Consumer Products Safety Act (CPSA)</i>	<p>Restricts the amount of lead in paints manufactured after February 27, 1978 for sale directly to consumers and in paints to be used in residences, schools hospitals, parks, playgrounds, public buildings, and other areas where consumers have direct access to painted surfaces (non-industrial facilities).</p> <p>Bans the use of paint containing more than 0.06 percent lead by weight on interior and exterior residential surfaces, toys, and furniture.</p>
<i>October 1992 - Residential LBP Hazard Reduction Act (LBPHRA)</i>	<p>Directs the Environmental Protection Agency (EPA) and the Department of Housing and Urban Development (HUD) to jointly issue regulations requiring disclosure of known LBP and/or LBP hazards by persons selling or leasing housing constructed before the phase-out of residential LBP use in 1978.</p> <p>Instructs "Protect Your Family from Lead in Your Home" pamphlets be distributed to designated facilities.</p>
<i>August 1996 - TSCA Section 402 and 404 (implemented by Title 40 CFR 745)</i>	<p>Specifies training and certification requirements for LBP inspectors, risk assessors, project designers, supervisors, and workers, as well as establishes safe, effective, and standardized methods to conduct LBP actions.</p> <p>Allows States and Indian Tribes to seek authorization to administer and enforce the regulations developed under section 402.</p>
<i>June 1999 - Accreditation and Certification Fees (TSCA Section 402 (a)(3))</i>	Establishes fees for the accreditation of training programs and certification of contractors engaged in LBP activities to recover agency costs of administering and enforcing the standards and requirements applicable to LBP training programs and contractors engaged in LBP training programs.
<i>Occupational Safety and Health Administration (OSHA) Standards (Title 29 CFR 1910.1025, and 29 CFR 1926.62)</i>	<p>29 CFR 1910.1025 provides work practice guidance which limits the potential to track lead-containing dust and debris outside of the work area and into child occupied areas.</p> <p>29 CFR 1926.62 protects employees from occupational exposure to lead during construction, demolition, alteration, repair or painting. Requires a written compliance program to limit lead exposure; limits an employee's exposure to less than 50 micrograms of lead per cubic meter of air averaged over an 8-hour period.</p>
<i>Resource Conservation and Recovery Act (RCRA) (40 CFR 260-282)</i>	Regulates hazardous waste through a "cradle-to-grave" system to ensure proper management from generation of waste until ultimate disposal.
<i>State and Local Regulatory Requirements</i>	<p>State laws and regulations must be equivalent to, or more stringent than, Federal standards. There are some variations from State to State, and certain States have enacted very stringent hazardous waste and air quality requirements. Some States have specific lead activity experience requirements before LBP activity certification is granted.</p> <p>Contact NEPA Call-In at 202-208-6228 for state-specific requirements</p>

environmental concerns, including LBP. The order requires Reports of Excess (ROE) to include:

- a statement that the property contains no improvements prior to 1978, or
- a listing of the portions of the property constructed and/or renovated prior to 1978 and an indication of the probable presence of LBP, along with any available information regarding the use of LBP or test data indicating the presence or absence of LBP.

Implementing a LBP Management Program

To address the health risks associated with lead exposure, facility managers should implement a LBP Management Program that consists of confirming the presence of lead, choosing a management option, determining the waste disposal method and maintaining detailed records.

1. Confirm Presence of Lead

The first step in implementing an LBP program is confirming the presence of LBP through testing. There are several methods used for the identification of lead in paint. These methods can be separated into two distinct categories: laboratory analysis of bulk samples, and field testing using test kits and/or analyzers.

Laboratory Analysis - The most accurate detection method is laboratory analysis of bulk samples. This method offers extremely accurate results; however, analyses are very costly, time consuming, and are destructive in nature. This method also requires collecting a paint chip from every LBP-suspect surface to fully characterize the lead content in a facility.

Field Testing - There are a number of field testing methods. Field test kits use a chemical reaction to provide qualitative results. While this method of field testing is significantly less expensive than laboratory analysis, it does not provide numerical results. In addition, barium and calcium ions in some plaster may interfere with the test results.

Field X-Ray Fluorescence (XRF) test units are the preferred method of field analysis, due in part to their portability and accuracy. XRF instruments allow a LBP inspector to evaluate a facility both qualitatively and quantitatively, while significantly reducing the possibility of having to collect paint samples. The results are obtained relatively quickly and are usually accurate to +/- 0.3 milligrams per square centimeter (mg/cm²). However, an ARF may provide inconclusive results at lead levels of 1.5 mg/cm² and below.

2. Choose an LBP Management Option

To ensure a successful LBP management project there are several tasks GSA must complete during the project-planning phase, including finding a qualified contractor, developing an abatement plan, developing a testing plan and coordinating and scheduling the abatement.

Contractor Selection/Certification - Abatement contractors should have verifiable experience in building renovation and restoration procedures and be aware of all applicable Federal, State, and local regulations pertaining to lead abatement work and relevant licensing or certification requirements. All abatement workers must be trained and certified (as required by the EPA and/or State Regulations) in LBP abatement and have a pre-abatement medical examination. In addition to skills specific to lead abatement, abatement workers may need basic construction skills to perform various abatement tasks, such as demolition, painting, carpentry, and floor installation.

Abatement/Management Strategies - The four strategies for lead paint abatement are stripping, replacement, encapsulation or enclosure.

Paint stripping can be accomplished using a variety of chemical and physical stripping techniques. Chemical paint strippers are effective but require special personal protective equipment and containment and disposal of the waste stream. Physical stripping techniques include paint removal using abrasives or heat. Use of abrasives is discouraged as it can generate large amounts of lead dust. The physical stripping method also requires protective equipment and containment and disposal of the waste stream. Open flame burning, dry scraping, and machine sanding without attached HEPA must not be used to remove LBP.

Replacement is the removal of components such as windows, doors, and trim that have lead-painted surfaces and installing new components free of LBP. Replacement is a permanent solution and offers advantages of integrating well with renovation and modernization projects. Replacement may increase energy efficiency. For example, replacement windows can be more energy efficient than the original windows. The disadvantages of replacement are its high cost if done outside the context of a large-scale rehabilitation project, replacement components may be of lower quality than the original components; adjacent surfaces may be damaged; reinstallation of certain components requires skilled carpentry; a large volume of abatement debris may be generated, and nonstandard replacement parts may require special orders and additional ordering time.

Encapsulation is accomplished by making lead paint inaccessible by covering or sealing painted surfaces. However, encapsulants require periodic inspection and may require routine maintenance.

Enclosure is the resurfacing or covering of surfaces by mechanically durable affixed materials and provides relatively long-term protection.

Post-Abatement Cleanup - There are two basic post-abatement cleaning methods that, when used concurrently, have proven effective in LBP abatement projects. The dry cleaning method utilizes a high efficiency particulate air (HEPA) vacuum to clean all surfaces at the conclusion of a LBP abatement project. The wet cleaning method uses a high-phosphate detergent to wash all surfaces at the conclusion of the LBP abatement project.

After final cleanup, visual inspections can be performed to ensure all surfaces are free of dust and debris. Upon completion and before occupancy by residents is permitted, surfaces should be wipe tested to ensure lead levels do not exceed accepted standards. Surface sampling should not be conducted if there is a visible accumulation of dust or debris. In this case, wipe sampling should be deferred until thorough cleanup has been completed.

3. Waste Disposal Considerations

Dispose of lead-containing paint chips, debris and waste water in accordance with Environmental Protection Agency (EPA), State and local regulations. EPA requires that representative lead abatement wastes be tested to determine if materials are regulated under the Resource Conservation and Recovery Act (RCRA), 40 CFR Part 261. Hazardous waste must be disposed of at an EPA-approved hazardous waste disposal facility.

All LBP removed from a substrate by virtually any method will, almost without exception, be hazardous waste and should be disposed of accordingly. However, the abatement strategy used will effect the volume of waste produced. For example, abrasion generally produces some spent medium, such as steel shot or walnut hulls along with removed paint chips. Heat gun LBP abatement produces a concentrated mass of paint chips. Removal of components (windowsills, doorframes, etc.) containing or contaminated with LBP vastly increases the volume of waste material. Chemical strippers also increase the volume of hazardous waste. LBP abatement wastes should be carefully controlled to ensure lead containing materials are not combined with non-hazardous construction and demolition (C&D) wastes and that a minimum amount of lead contaminated debris enters the waste stream.

4. Record keeping

Record keeping is an essential part of any LBP Management Program. When individual lead and LBP evaluations are performed, permanent records must be maintained. These records should document all aspects of training and worker protection, personal exposure modeling, educational seminars, comprehensive LBP survey results, blood lead screening results, maintenance records, abatement records, and waste testing and disposal.

LBP Management Guidance Under Development

Residential Lead Hazard Standards - (TSCA Section 403). EPA proposed to establish standards under TSCA Section 403 for identifying hazards from LBPs (63 Federal Register 30302, June 3, 1998). The rule establishes when LBP, lead-contaminated dust and lead-contaminated soil are considered hazardous, sets lead-contaminated dust cleanup levels, and revises dust and soil sampling procedures.

TSCA and RCRA Proposed Rulemakings for LBP Debris Disposal. The EPA found that disposing of LBP debris in construction and demolition landfills was safe and more cost efficient than using other types of landfills. The Agency is proposing new management and disposal standards that would change the management of LBP debris from the Resource Conservation and Recovery Act (RCRA) to the Toxic Substance Control Act (63 FR 70190, December 18, 1998). It is hoped that

by decreasing the disposal costs that the pace of LBP abatement will increase.

For More Information

More information on LBP issues is available by contacting NEPA Call-In at 202-208-6228 or:

- National Lead Information Center at 1-800-424-LEAD or www.epa.gov/opptintr/4lead/nlic.htm
- EPA's Toxic Substances Control Hotline at 202-554-1404
- EPA's Lead Programs Web Page at www.epa.gov/opptintr/lead/index.html

References

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- "LBP", HQ AFCEE/EP (PRO-ACT), Fact Sheet 16487, January 1998.
- "Proposed Rule on Identification of LBP Hazards", EPA Fact Sheet, EPA 747-F-98-001, June 1998.
- "Proposed Standards to Identify Dangerous Levels of Lead", EPA Questions and Answers, June 1998.
- "Proposed Standards to Identify Dangerous Levels of Lead", EPA Fact Sheet, EPA 747-F-98-002, June 1998.
- "Proposed Rule on the Management and Disposal of LBP Debris", EPA Fact Sheet, EPA 747-F-98-007, December 1998.
- "Proposed Rule on the Management and Disposal of LBP Debris", EPA Questions and Answers, EPA 747-F-98-005, December 1998.
- Lead Inspector Training, EPA Model Training Course Curriculum, Student Manual, April 1993.
- "Management and Disposal of LBP Debris; Proposed Rule", Federal Register, Volume 63, Number 243, December 18, 1998.
- "Temporary Suspension of Toxicity Characteristic Rule for Specified LBP Debris; Proposed Rule," Federal Register, Volume 63, Number 243, December 18, 1998.
- "Reducing Lead Hazards When Remodeling Your Home," EPA, EPA 747-K-97-001, September 1997.
- "Protect Your Family From Lead in Your Home," EPA, EPA747-K-94-001, May 1995.
- "Lead Based Paint in Child Care Centers," Technical Guide E-401, GSA Environmental Management Division, March 1995.
- "Lead Based Paint," Technical Guide E-402, GSA Environmental Management Division, March 1995.

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